Exploring the Periodic Table: A Homework Sheet for 12-Year-Olds

Student Name: _____

Class: _____

Due Date: _____

Introduction to the Periodic Table

The periodic table is a powerful tool used by chemists to organize and understand the properties of elements. It is a tabular display of the known chemical elements, organized by their atomic number, electron configuration, and recurring chemical properties.

Activity 1: Matching Game

1. Hydrogen - _____
2. Helium - _____
3. Lithium - _____
4. Beryllium - _____
5. Boron - _____

Answers:

1. H
2. He
3. Li
4. Be
5. B

Understanding Atomic Number and Symbol

The atomic number of an element is the number of protons in its atomic nucleus. The symbol of an element is a unique abbreviation of its name.

Activity 2: Fill in the Blanks

Element	Atomic Number	Symbol
Hydrogen	1	_____
Helium	2	_____
Lithium	3	_____
Beryllium	4	_____
Boron	5	_____

Answers:

Element	Atomic Number	Symbol
Hydrogen	1	H
Helium	2	He
Lithium	3	Li
Beryllium	4	Be
Boron	5	B

Exploring Element Properties

Elements can be classified into different categories based on their properties, such as metals, nonmetals, and metalloids.

Activity 3: Classification

1. Sodium - _____
2. Carbon - _____
3. Oxygen - _____
4. Nitrogen - _____
5. Silicon - _____

Answers:

1. Metal
2. Nonmetal
3. Nonmetal
4. Nonmetal
5. Metalloid

Periodic Trends

The periodic table shows relationships between elements, with elements in the same group having similar properties and elements in the same period having similar electron configurations.

Activity 4: Periodic Trends

Element	Group	Period	Trend
Lithium	1	2	_____
Sodium	1	3	_____
Potassium	1	4	_____
Rubidium	1	5	_____
Caesium	1	6	_____

Answers:

Element	Group	Period	Trend
Lithium	1	2	Highly reactive
Sodium	1	3	Highly reactive
Potassium	1	4	Highly reactive
Rubidium	1	5	Highly reactive
Caesium	1	6	Highly reactive

Element Research

Choose an element from the periodic table and research its properties, uses, and interesting facts.

Activity 5: Element Research

Write a short report on your chosen element, including its:

- Symbol and atomic number
- Properties (e.g. highly reactive, toxic, etc.)
- Uses (e.g. medicine, technology, etc.)
- Interesting facts (e.g. discovery, abundance, etc.)

Periodic Table Puzzle

Activity 6: Periodic Table Puzzle

	1	2	3	4	5	6	7	8	9	10
1	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____
2	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____
3	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____

Answers:

	1	2	3	4	5	6	7	8	9	10
1	H									
2		He	Li	Be	B	C	N	O	F	Ne
3			Na	Mg	Al	Si	P	S	Cl	Ar

Element Sorting

Activity 7: Element Sorting

1. Sodium - _____
2. Carbon - _____
3. Oxygen - _____
4. Nitrogen - _____
5. Silicon - _____
6. Calcium - _____
7. Phosphorus - _____
8. Sulfur - _____
9. Chlorine - _____
10. Argon - _____

Answers:

1. Metal
2. Nonmetal
3. Nonmetal
4. Nonmetal
5. Metalloid
6. Metal
7. Nonmetal
8. Nonmetal
9. Nonmetal
10. Nonmetal

Periodic Table Scavenger Hunt

Activity 8: Periodic Table Scavenger Hunt

1. Hydrogen - _____
2. Helium - _____
3. Lithium - _____
4. Beryllium - _____
5. Boron - _____
6. Carbon - _____
7. Nitrogen - _____
8. Oxygen - _____
9. Fluorine - _____
10. Neon - _____

Answers:

1. 1
2. 2
3. 3
4. 4
5. 5
6. 6
7. 7
8. 8
9. 9
10. 10

Element Charades

Activity 9: Element Charades

1. Hydrogen
2. Helium
3. Lithium
4. Beryllium
5. Boron

Answers:

1. Highly reactive gas
2. Lighter than air
3. Highly reactive metal
4. Toxic metal
5. Semiconductor

Conclusion

Congratulations on completing the homework sheet! You have learned about the periodic table, element properties, and periodic trends. Remember to review and practice what you have learned to become a master of the periodic table!